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# Walleye Size Limits

## A Look at the Options and Why They Aren't Currently Needed on North Dakota's Two Largest Fisheries

By Randy Hiltner and Jeff Hendrickson

*Above: In the last decade, the Game and Fish Department has at times applied size regulations for walleyes on major fishing waters. Those regulations were removed and biologists say Sakakawea and Devils Lake walleye populations are in good shape and size limits aren't currently necessary.*

When some anglers think other anglers are keeping too many small walleye, or too many big fish, discussion often turns to size limits as a way to improve fishing. However, like methods for catching North Dakota's most popular game fish, opinions on size limit regulations vary.

While angler concerns are sincere, size limit regulations often do not produce the desired, or expected, results. Under the right circumstances, some size limits have been effective, but many have also failed. It often depends on the lake. A restriction that benefits one lake could actually hurt the walleye population in another.



Minimum size limits are supposed to increase the number of walleye under the minimum size. This regulation, in some situations, may delay harvest of juvenile walleye until they grow close to 14, 15 or 16 inches. The downsides of minimum size limits, in certain situations, are high mortality for fish caught and released, fish get harvested as soon as they grow close to legal length, population size structure may shift to many fish just below the legal length, and stunting may occur.

Slot limits are designed to increase the number of larger walleye by protecting mid-sized fish, while allowing harvest of fish smaller and larger than the protected size. An example of a slot limit would be the release of all fish from 18-23 inches. Harvest below the slot may take advantage of a surplus of smaller walleye, and possibly increase catch and harvest opportunities for larger fish. The medium-sized fish would be protected to theoretically provide larger fish for anglers.

A slot limit is not needed to protect spawners as there are typically plenty in a

lake to produce a good hatch. Determining the actual slot range is tricky, as lake productivity and walleye growth rates need to be considered. If growth slows, walleye may accumulate in the slot range. Slot limits are not usually popular because anglers must release nice-sized walleye they are used to keeping.

A maximum size limit requires release of all fish longer than a certain length. This regulation is designed to increase the number of large fish above the designated length. High angling pressure may prevent many walleye from reaching the maximum size limit. This restriction is not often used as anglers may have to release a trophy of a lifetime.

A similar size restriction is the "one-over" regulation. This restriction allows harvest of one walleye longer than the specified length, say, 24 inches, and is more acceptable to anglers.

Depending on the designated length and lake, this restriction would likely not affect overall harvest as fewer anglers today catch and keep bigger walleyes. Most anglers do not catch a limit so it does not affect them. Yet it may affect anglers who consistently catch lots of fish, as well as those who occasionally catch big fish.

All size restrictions are intended to conserve fish, and to be effective, walleye must have the potential to respond. Anglers must also accept and comply with the regulation. If there is no biological reason for a size restriction, and anglers are happy with a given lake's walleye size structure, then a regulation is not needed.

Game and Fish biologists are often asked about potential for walleye size limits on Devils Lake and Lake Sakakawea, two of North Dakota's finest walleye fisheries. The following discussions look at these two large bodies of water to examine whether any type of size limit might improve, or damage, the current respective fisheries.

## Devils Lake

Judging from the number of comments, anglers have considerable interest, or concern, about walleye size limits for Devils Lake, as every scheme possible has been requested at one time or another.

### Minimum Size Limit

Much angler concern relates to small walleye. Typically, small walleye are more abundant and easier to catch, and anglers often think these small fish need protection because other people keep too

many. Some think that a large harvest on these fish will eventually lead to fewer larger walleye in the system.

Netting surveys show that Devils Lake today has abundant young walleye because of excellent reproduction in recent years. Small walleye growth rates in Devils Lake are also fair to good. Since minimum size limits aren't warranted when reproduction and growth are good, Devils Lake is not a candidate for such regulations. In fact, when applied unnecessarily, minimum size limits can be ineffective and even CAUSE problems. For example, if Devils Lake had a 14-inch minimum size limit, many "protected" walleye would be harvested as soon as they reached 14 inches. This regulation would do little to increase the number of larger walleye in the lake.

If larger fish is the goal, then the minimum size limit would have to be much longer, say, 20 inches. With this regulation, anglers would have to release nearly all walleye caught in Devils Lake today. Also, some catch-and-release mortality would occur, limiting the regulation's benefit.

Even though many small walleye have been harvested at Devils Lake the past several years, the overall net-catch rate in Department fisheries surveys has gone up. Records from the early 1990s indicate that most netted walleye were large, meaning that even with heavy fishing pressure during the 1980s, many walleye still grew to a large size.

### Slot Limit

We don't know for sure how a slot limit would affect walleye size structure in Devils Lake. Criteria for imposing a slot limit requires some information on fishing and natural mortality that we don't yet have, but should be available in 2004.

Without an existing size limit regulation, the trend for Devils Lake walleye size structure is toward larger fish. The percentage of 15- to 20-inch walleye in netting surveys has been increasing since 1999.

Many anglers are satisfied with catching and keeping walleye of less than 20 inches, with an occasional larger fish. In a 2001 creel survey, 65 percent of anglers rated Devils Lake fishing as good to excellent. Larger walleye are now available to anglers who prefer to catch and release big fish.

Today, a slot limit on Devils Lake is unnecessary. However, if future netting surveys show a trend toward fewer mid-sized walleye, then Game and Fish biologists would reevaluate this regulation's potential.

### Maximum and One-over Size Limits

The idea of harvesting a maximum of one large walleye per day appeals to many anglers. Days of two anglers bringing a limit of 5- to 8-pound fish to the cleaning table are numbered, at least in the minds of some. Most anglers would like to see catch-and-release of bigger walleye, with a chance for keeping a trophy fish for the wall.

In spring, anglers observe what they perceive as “lots” of larger female walleye harvested in the upper reaches of

Devils Lake. Higher harvest seems to correlate with higher spring inflows, especially in Channel A and Mauvais Coulee.

To assess spring harvest, the Game and Fish Department organized a creel survey for these two fishing locations last spring. With little snowpack and associated spring runoff in the watershed, however, the walleye harvest in these two locations was limited.

During a two-week period from April 16 to May 5, 2002, the estimated walleye harvest was just 330 fish. Only 23 walleye, averaging 20 inches in length, were actually measured during this time. The spring harvest was likely much higher in 2001, as more runoff entered the lake and anglers were observed catching more fish. Despite this assumed high catch of large females in 2001, Devils Lake produced an excellent year-class of walleye.

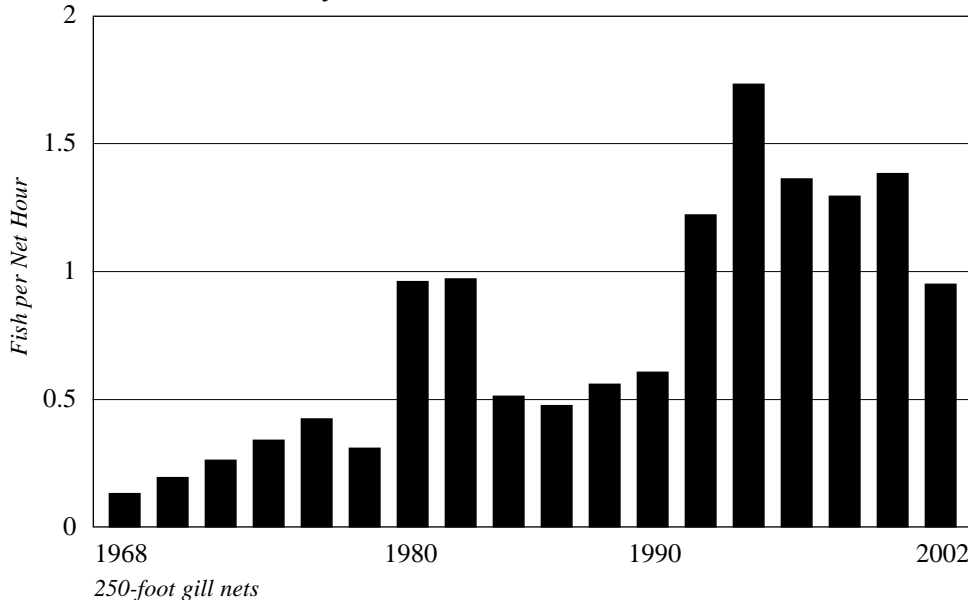
While anglers understandably want to protect big, spawning walleye to better the odds of successful reproduction, the fact is that walleye have a tremendous reproductive capacity, and not many egg-layers are needed to produce a strong year-class if there is good spawning habitat. One large fish, for example, can carry more than 100,000 eggs. So, it doesn't matter if a big walleye is harvested in April or August.

The spring harvest does not last long and is confined to a relatively small area. Walleye spawn in many different locations in Devils Lake, so biologists do not believe spring harvest is harmful to the walleye population.

During May and June, two of the best walleye fishing months at Devils Lake, creel survey clerks measured fish kept by anglers in 1998 and 2001. Only 1 percent and 4 percent of walleye kept were longer than 24 inches those two years. If a one-over limit had been in place, it likely would have reduced the harvest of a few angling parties, but others would have kept the legal limit of one large walleye each, with a net reduction of few fish.

A one-over size limit would do little to improve future hatches at Devils Lake.

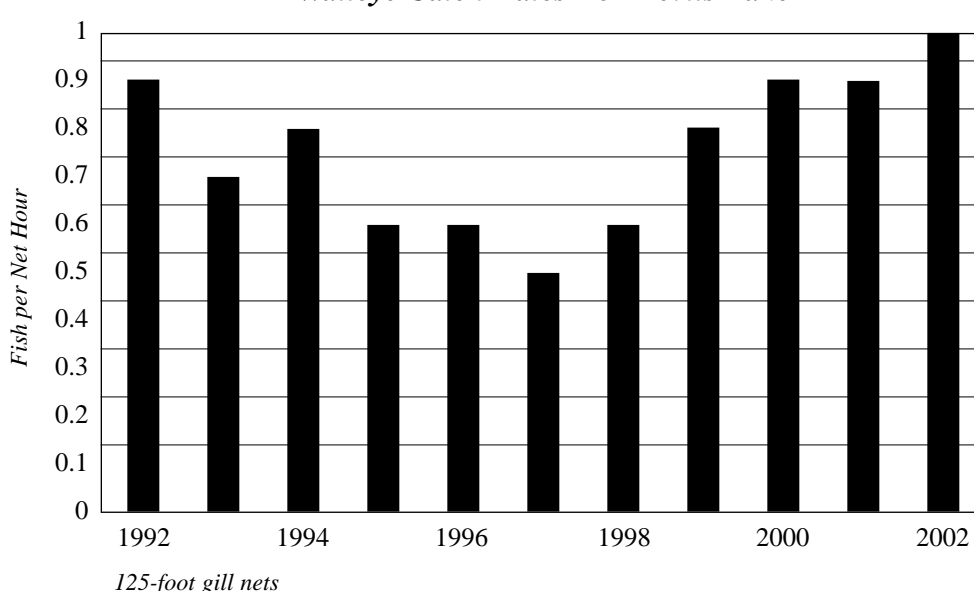
**Walleye Catch Rates For Lake Sakakawea**



**Walleye Catch Rates For Sakakawea and Devils Lake**

Game and Fish netting surveys show both Sakakawea (above) and Devils Lake (below) have excellent walleye populations. These catch rates are comparable since Sakakawea surveys were taken with 250-foot nets and Devils Lake researchers use 125-foot nets. The statewide average walleye-per-net-hour catch rate for 125-foot nets is about .25, about one-fourth the catch rates for Sakakawea and Devils Lake.

**Walleye Catch Rates For Devils Lake**



However, it may “recycle” some larger walleye to be caught again by other anglers and allow for an angler to keep a trophy, or deep-hooked fish. The practice of catching and killing larger walleye is more of a social concern than a biological issue at Devils Lake.

## Lake Sakakawea

Many anglers have also expressed interest in adopting size limits on Lake Sakakawea.

### Minimum Size Limit

Similar to Devils Lake, many Sakakawea anglers are concerned with a perceived over-harvest of small walleye, since smaller fish are typically more plentiful and caught more often.

Netting surveys show reproduction is fairly inconsistent in Lake Sakakawea. Stocking to supplement natural reproduction has fixed that, producing several good walleye year-classes since 1996. Small walleye growth has slowed in recent years because of falling water levels, which has hurt the forage base.

According to tagging studies from 1995 to 1997, natural mortality and angler harvest of fish longer than 14 inches were low on Lake Sakakawea. A tagging study started in 2002 will update mortality data under current conditions.

The only criterion met for minimum size limits on Lake Sakakawea is low natural mortality, which is a good thing. Even if all criteria were met, a minimum size regulation would do little to conserve additional walleye.

Creel surveys in 1997 and 2000 showed that many anglers on Lake Sakakawea policed themselves by keeping few walleye under 14 inches long, even though these fish were abundant and readily caught.

### Slot Limit

Tournament anglers and others frequently push a slot limit as the fix-all regulation for Lake Sakakawea. The reality is that few slot limits exist (we don't have any in North Dakota), and there is little documented evidence they produce the intended result.

For this type of regulation to work, a lake must have high natural fish mortality combined with high angler effort. Natural mortality and angler effort are currently low on Lake Sakakawea. Creel surveys show a small percentage of overall walleye harvest is fish larger than 20 inches, and few anglers consistently catch larger fish. Consequently, any slot limit for walleye larger than 20 inches would not safeguard many fish.

To effectively protect the most fish, a slot regulation for Sakakawea would have to cover walleye from 15 to 20 inches long, something many anglers wouldn't favor as these are considered the best eating fish. Lake level forecasts for Sakakawea have water levels approaching near-record lows in 2003. If this happens, natural mortality could increase because of reduced walleye food, and conserving fish would serve no short-term purpose.

*Size limits are an effective tool in certain situations for reducing harvest of walleye of various sizes and producing quality fishing. The key is to apply the specific regulation only when it is necessary and with a defined, understood purpose. For example, the regulation should not be placed because a vocal minority of anglers would like to catch more walleye of a certain size.*

*Management of important fisheries, such as Devils Lake and Lake Sakakawea, involves many types of user groups and the Game and Fish Department strives to manage walleyes for the enjoyment of all anglers.*

### Maximum and One-over Size Limits

Maximum size limits are useful when there are few fish bigger than the specified size, and potential to harvest them is high.

Though overall catch rate decreased in 2002, walleye numbers in Sakakawea are still relatively high. Recruitment of fish to larger size groups has been good, and the catch rate of larger walleye has been increasing without a regulation. Also, tagging studies have shown that exploitation of larger walleye in Sakakawea is not significantly greater than for smaller walleye.

There really isn't a specific time of year when larger walleye, or spawners, are more vulnerable to anglers in Lake Sakakawea. So, a maximum size limit will not improve the walleye fishery.

Habitat and food are the most important factors influencing the walleye fishery on Lake Sakakawea. This multipurpose reservoir undergoes drastic water level changes, which influence abundance of forage fish such as rainbow smelt. Improving this fishery depends much more on changing current water management practices than regulations. Until this happens, anglers will just have to go with the flow and expect good times and bad times.

Enjoy the good times.

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